



Filing Receipt

Received - 2021-09-09 06:02:27 PM
Control Number - 52373
ItemNumber - 122

PROJECT NO. 52373

REVIEW OF WHOLESALE	§	PUBLIC UTILITY COMMISSION
ELECTRIC MARKET DESIGN	§	OF TEXAS

Comments of EnergyHub Inc.

These comments are submitted on behalf of EnergyHub, Inc, a provider of a distributed energy resource management system (DERMS) and turnkey demand-side management services. EnergyHub provides advanced demand response software and services to more than 60 electric and gas utilities in North America, and has been a leading aggregator of residential load in the Texas market since 2013. EnergyHub currently manages over 410 MW of residential load registered in the TDSP Residential Load Management programs, ERCOT Emergency Response Service (ERS), and Municipally Owned Utility (MOU) demand response programs. Our responses below address Questions 1 through 4 posted in this proceeding on September 2, 2021 as input to the September 16 PUCT working session.

Responses to Questions

- 1. Describe existing and potential mechanisms for residential demand response in the ERCOT market.**
 - a. Are consumers being compensated (in cash, credit, rebates, etc.) for their demand response efforts in any existing programs today, and if not, what kind of program would establish the most reliable and responsive residential demand response?**
 - b. Do existing market mechanisms (e.g., financial cost of procuring real time energy in periods of scarcity) provide adequate incentives for residential load serving entities to establish demand response programs? If not, what changes should the Commission consider?**

Aggregators of residential customers are not fairly compensated through the existing DR participation mechanisms, and as a result, end customers cannot be appropriately compensated for the value they provide to the grid during load management events. Existing and potential mechanisms for residential demand response in the ERCOT market generally fall into four categories, as outlined below:

ERCOT Emergency Response Service (ERS). While residential demand response providers like EnergyHub can and do currently participate in the ERS Weather-Sensitive Load program, the program spending limit

established by Rule 25.507¹ has caused clearing prices to remain low, limiting participation from new entrants and existing aggregators alike. ERS payments are well below the system-wide wholesale energy market price cap. For example, this summer, the ERS auction will compensate aggregators roughly \$14/kW for load shed dispatchable during the time periods most appropriate for weather-sensitive loads (e.g., HVAC). For comparison, a resource providing energy during a two-hour scarcity period (at the energy price cap) will be compensated more than an aggregation of the same quantity would earn after an entire season of ERS WSL participation. It will be crucial to expand funding for the ERS program beyond the \$50 million annual funding cap to fairly price residential demand response and in turn enable market participants to fairly compensate their end customers.

TDU Load Management Programs. ERCOT TDUs are responsible for achieving annual energy and demand reductions pursuant to Substantive Rule 25.181. The TDU load management standard offer programs contribute to each TDUs respective demand reduction targets, and collectively bolster reliability on the distribution grid alongside the ERCOT ERS program. While TDU load management programs are incrementally more lucrative than the ERS program (roughly \$32/kW), prices have decreased in recent years and still fall well below the Avoided Cost of Capacity of \$80/kW established by the PUCT.² DR providers do not receive energy payments under ERS or the TDU load management programs, making it all the more difficult to make up the shortfall in ERS market clearing prices or TDU program compensation relative to the grid value.

Load-Serving Entity (LSE) Programs. This category includes a broader range of demand response programs offered by Municipally Owned Utilities (MOU), Electric Cooperatives (EC), and Retail Electric Providers (REP), such as time-varying rates (e.g., Critical Peak Pricing), behavioral demand response, third-party programs (e.g., Bring Your Own Device), and voluntary demand reduction incentives (e.g., 4CP mitigation). While LSE program compensation varies by LSE and the type of load response, end customers are typically compensated through reduced energy bills or separate payments for program enrollment and/or ongoing participation. LSEs such as CPS Energy and Austin Energy offer residential DR programs which compensate customers fairly for making their direct load control resources (e.g., connected thermostats) available for demand response events during the summer season. For instance, Austin Energy is currently offering

¹ See Section 25.507(b)(2)

² Public Utility Commission of Texas, Project No. 38578 - Energy Efficiency Implementation Project under 16 TAC § 25.181(q), *Avoided Cost of Capacity and Energy for the 2021 Program Year*

customers a \$85 incentive to enroll in their Power Partners demand response program, plus a \$25 rebate for each newly purchased device.

Load Resource Participation in SCED or Ancillary Services Markets. Competitive Retailers (CR) or non-opt-in entities (NOIE) can leverage Aggregated Load Resources (ALR) to reduce their real-time energy market obligations in ERCOT and in turn capture the full energy market value of DR resources. Conversely, non-LSE DR providers (e.g., third-party aggregators of residential customers) are not able capture the energy market value of demand response through ERS, the TDU load management programs, or the ancillary services (AS) market. Adding an energy component to the existing base ERS payment would align the ERS program with the energy market and compensate DR providers for full value of DR deployments dispatched by ERCOT or the TDUs.

In summary, EnergyHub recommends the following as means to address these barriers to residential DR:

- Increase the cost cap for the TDU load management programs administered pursuant to Rule §25.181
- Establish an additive performance bonus category under Rule §25.181 to incentivize the TDUs to achieve “dispatchable” peak reduction targets that are distinct from those achieved under the combined Energy Efficiency Program portfolio
- Increase DR provider compensation under the TDU load management programs to be commensurate with the full suite of grid benefits delivered, and enable the fair compensation of residential customers
- Expand the ERCOT ERS program beyond the \$50M budget cap to provide additional reliability
- Develop a mechanism to compensate DR providers for the energy value of load response delivered as part of the ERCOT or the TDU programs, and ensure that the energy values of such deployments are commensurate with the market value of energy during scarcity periods

2. What market design elements are required to ensure reliability of residential demand response programs?

- a. **What command/control and reporting mechanisms need to be in place to ensure residential demand response is committed for the purpose of a current operating plan (COP)?**
- b. **Typically, how many days in advance can residential demand response commit to being available?**

We believe that current procedures, such as annual test events in ERS and the TDU programs, and basic statistical methods to estimate a weather-sensitive baseline and load shed measurement, are sufficient to measure and confirm the available level of demand response for the purpose of a COP. Residential DR is

extremely reliable, especially when enabled by direct load control technologies and distributed energy resources like connected thermostats, electric vehicle chargers, and residential batteries. Load resources are responsive and flexible, with the ability to respond instantaneously to dispatch signals from the grid operator without the need for customer action. While we are not opposed to defining additional appropriate and reasonable command/control and reporting mechanisms, we caution that overly prescriptive and onerous requirements will dissuade new entrants and hinder the growth of DR. Moreover, the predictability and reliability of a given aggregation of load resources only improves over time as the amount of historical performance data available to aggregators and the size of the demand response programs both increase.

3. How should utilities' existing programs, such as those designed pursuant to 16 TAC § 25.181, be modified to provide additional reliability benefits?

a. What impediments or obstacles prevent these programs from reaching their potential?

See Question 1 for a summary of recommended changes to the design of demand response programs in Texas. To recap, EnergyHub recommends that the Commission consider the following actions: increase the TDU load management program cost caps and expand the ERS spending limit to quickly and efficiently increase participation and enable appropriate aggregator and customer participation; and, develop an energy payment as part of the ERS and TDU compensation structure to capture the full value that DR resources can provide during scarcity periods.

Furthermore, the TDU and ERS Weather-Sensitive Load (WSL) programs are still relatively small. There are two primary drivers of growth for these programs: 1) the conversion of DER owners into DR program participants, and 2) the growth of Behind-the-Meter (BTM) DERs purchased and installed by customers. The TDU load management programs have the ability to drive adoption of enabling technologies, such as thermostats, by stacking energy efficiency and DR benefits. Additionally, the TDU programs operate only in the summer, which limits ERCOT's ability to address supply shortages outside of the summer period, as experienced during Winter Storm Uri. In addition to our recommended actions Question 1, EnergyHub suggests the following for the Commission's consideration:

- The Commission should set overarching reliability-related DR goals in addition to the peak reduction goals set by TDUs as required under Rule §25.181. For example, the Commission could adopt a goal of acquiring emergency reliability-responsive DR programs of at least 10% of peak system load
- The Commission should consider requiring that the TDU load management programs offer participation in an optional winter DR capability period, compensating aggregators and

customers for this additional resource (e.g., electric heating load resources) in addition to the assignment of energy payments as suggested in Question 1

- 4. Outside of the programs contemplated in Question 3, what business models currently exist that provide residential demand response?**
- a. What impediments or obstacles in the current market design or rules prevent these types of business models from increasing demand response and reliability?**

EnergyHub believes that the existing market framework is inadequate to develop the DR resources needed to ensure the reliability of grid operations. Apart from the NOIE utility DR programs, the current ERS and TDU program models do not sufficiently compensate aggregators relative to the \$80/kW avoided cost established by the PUCT. In the short-term, increasing the available budget for TDU programs and ERS would increase the level of DR on the grid. Increased budgets will both “uncap” the existing programs to allow for higher participation, and enable aggregators to pay customers for the true value that DR provides to the grid.

Conclusion

EnergyHub appreciates the opportunity to provide input into the upcoming PUCT working session and looks forward to collaborating with the Commission and other stakeholders to make progress on these important topics.

Sincerely,

Brady Klein
Sr Manager, Market Development
EnergyHub
klein@energyhub.net
(718) 522-7051

PROJECT NO. 52373

REVIEW OF WHOLESALE	§	PUBLIC UTILITY COMMISSION
ELECTRIC MARKET DESIGN	§	OF TEXAS

Executive Summary

EnergyHub appreciates the opportunity to provide comments and strongly supports Commissioner McAdam's September 2 PUCT Open Meeting remarks about demand response, and the benefit that advanced demand response can have on the health and reliability of the ERCOT market. Demand flexibility – and residential demand response, in particular – represents a massively untapped resource to be cost-effectively leveraged for the benefit of all Texas energy market stakeholders. Moreover, EnergyHub believes that residential load management can be expanded substantially at a lower long-term cost to ERCOT and to electric customers relative to supply-side alternatives.

Residential demand response can play a critical role in mitigating grid emergencies, with an estimated 1 GW of summer load shed potential available today through smart thermostats alone.¹ The existing options for residential demand response lack sufficient compensation for the value delivered to the market, which limits customer participation. The PUCT should consider the following market design changes in order to address barriers to residential demand response:

- Increase the cost cap for the TDU load management programs administered pursuant to Rule §25.181
- Establish an additive performance bonus category under Rule §25.181 to incentivize the TDUs to achieve “dispatchable” peak reduction targets that are distinct from those achieved under the combined Energy Efficiency Program portfolio
- Increase DR provider compensation under the TDU load management programs to be commensurate with the full suite of grid benefits delivered, and enable the fair compensation of residential customers
- Expand the ERCOT ERS program beyond the \$50M budget cap to provide additional reliability
- Develop a mechanism to compensate DR providers for the energy value of load response delivered as part of the ERCOT or the TDU programs, and ensure that the energy values of such deployments are commensurate with the market value of energy during scarcity periods

¹ See public comments filed by AEMA in response to the PUCT's Memorandum containing Questions for Comment regarding Project No. 52373 on August 3, 2021